

A scenic landscape photograph of a mountain valley. In the foreground, a wooden staircase or path leads up a grassy hillside. To the left, there are rows of green plants, possibly tobacco. In the background, rolling green hills and mountains are visible under a clear blue sky. A small wooden building is nestled in the valley.

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Cover: Virginia Bison, by Carl "Spike" Knuth, Richmond

Editorial

A RAY OF HOPE

In this bicentennial year it is tempting to look back on our 200 year history and say "where has it all gone and what state have we come to?" The abundance that was this virgin land has been used up, transformed into concrete and steel, houses, gadgets and, more importantly, people. It was part of the fuel which helped sustain our society as it grew. We lost the unspoiled beauty of our landscape, several of our wildlife species, much of the beauty and usefulness of our rivers and most of our room to roam. It is tempting to say we are helplessly going from bad to worse, but conservation history does not bear this out.

The great outdoors hit its low ebb about the last of the 19th Century. Interested citizens viewed what was left of our outdoor heritage and said "whoa!" Leaders helped set aside forests and park lands. Citizen groups demanded and got laws to protect wildlife, woodlands and streams. Agencies were created to implement these laws and the disastrous destruction of our outdoors was halted. Forests were re-established, animal population increased and soil conservation practices were introduced. Things were looking up.

Then came the population explosion, the outdoor recreation boom, nuclear energy, pesticides, and the energy crisis. Again we lost clean rivers, wildlife habitat, prime farmlands, unique ecosystems, clean air and open space. This time environmentally alert Americans rose to the challenge. New laws were passed

and new agencies formed. Although the situation is far from under complete control, disaster has again been averted.

Trends already evident show the direction we are heading. Stream standards are being tightened to assure our waters will become cleaner, not dirtier. Stricter emission standards are likewise pointing toward a clearing of the air. The interests of wildlife and outdoor recreationists are being given greater consideration. Mandatory land-use planning is on the horizon to halt reckless development and preserve limited farm and open space land. Erosion controls are being tightened. Environmental impact statements bring all the adverse facts out into the open so the public and administrators can understand what they are compromising when important projects are approved. We are at least aware of energy efficiency and the effects of energy demands on our environment. Our life is destined to get vastly more complicated by rules and regulations simply because there are so many of us. Doing our own thing is increasingly more apt to prevent someone else from doing theirs.

Our history shows that we are fighters and although the odds increase daily we don't give up. It appears we have the determination to preserve at least those things we hold most dear in the face of seemingly overwhelming odds. Perhaps the spirit of '76 is our greatest national resource. It is certainly our best hope for a better tomorrow. —HLG

Letters

CALLING ALL GROUSE

IN grouse hunting, there are three very important things; the Blue Ridge Mountains, a light gun, and last but not least, strong legs.

Never expect the expected from grouse, although one thing you can count on is that they will be in the thickest brush they can find. Sometimes Mr. Grouse will almost let you step on him, then he will get up wild and fly out of range.

I hope these few facts about grouse hunting will help a young hunter next season.

William R. Pritt
Culpeper

PRAY, TELL ME

I UNDERSTAND that the Praying Mantis is proposed as the state insect.

I admire this insect in its place, one capable of making its own way, but because of its ferocious nature towards other insects, I do not feel it is appropriate to represent Virginia.

I am aware it serves a part in nature but to laud it and enhance it to a degree of

revering it, I do not feel that the Praying Mantis, and I mean "Preying" is the bug we need for a state insect.

Della P. Compton
Roanoke

ALL IN A DAY'S WORK

HAVING enjoyed your magazine for many years, I would like to share a rare experience.

About six o'clock on an evening of this past week I was working my way around the clay banks of a small farm pond near my home. As the bass for which I was fishing were busy with their propagation duties, I did not mind at all having my attention drawn to the antics of a turtle, (species unknown), which seemed to be doing some very un-turtlelike things there on the bank. As I stooped for a closer look, I realized that she was depositing her eggs in a quarter-sized hole. I watched her squeeze out nine very egg-shaped eggs (I had previously thought that turtle eggs were round), after which each was carefully pressed down into the nest with a very deft hind foot.

When finally empty of eggs, she covered the hole with clay, again using her hind feet. The process took about five minutes, after which she slowly ambled back down to the water and was gone. I could barely discern the spot where she had been working.

Robert Cox
Suffolk

KEEP YOUR EYES ON THE CUCKOO

YOUR May article on the yellow-billed cuckoo reminded me of some two years ago when one flew into the picture window of our house in James City County and killed itself. Dr. Mitchell Byrd, ornithologist at the College of William and Mary, happily accepted the dead cuckoo for inclusion in the collection of stuffed birds used by ornithology classes. The yellow-billed cuckoo, Dr. Byrd explained, is much less common in eastern Virginia than is the black-billed species.

Alan W. Stewart
Williamsburg



Ginseng: Appalachian Gold

By Paul H. Bratton, Jr.
Deerfield

Most people go to the woods in search of something. Some seek the mountain peaks, and others seek native trout or wild mushrooms.

One plant, native to the forests of both North America and Asia, is the object of many searches. The folklore of this inconspicuous herb spans thousands of years and claims of its healthful properties reach to the modern research lab.

The Cherokee of the Smoky Mountains knew it as *atali-guli*, the mountain climber. The white man came to know it as ginseng or *sang*, after the Chinese, *shen seng*. The Chinese name, meaning man-root, refers to the root's tendency to branch in a human-like form.

Before the white man came to America, the Cherokee priests ritually gathered ginseng roots from the wilderness. They believed it a sentient being, capable of making itself invisible to those unworthy of gathering it. The first three plants found were passed by, and, after a prayer asking the plant's permission for



Distinctive five-part leaves and red fall berries are ginseng's trademark.

a piece of its flesh, the fourth was dug. A bead was buried in the root's hole as payment. The priest then gathered as much ginseng as was needed for use in the native medicines.

The commercial gathering of ginseng in North America began when a Jesuit priest in Canada found that the American ginseng (*Panax quinquefolium*) fit a description of a plant highly valued in the Orient (*panax ginseng*). The Jesuits sent a boatload of the North American root to Canton in 1718 and the ginseng boom was on.

William Byrd in his *HISTORY OF THE DIVIDING LINE BETWEEN VIRGINIA AND NORTH CAROLINA*, written in 1728, recommended chewing ginseng root to ward off fatigue. But few Americans took his advice and most American ginseng has been shipped to Asia, where it is considered capable of prolonging life and virility. The Oriental appetite for the American ginseng seemed insatiable and frontier residents of North America were quick to convert this product of the virgin forest to cash. Large amounts of the root were dug for market. In 1788, Daniel Boone sold fifteen tons of ginseng to a Philadelphia firm for about one dollar a pound.

Booms have come and gone, and the dried root now sells for almost seventy dollars a pound. The constant gathering, as well as the clearing of most of the original forest, has made ginseng a rare plant, more often hunted than found. Even in the 1700's, botanists Andre' Michaux and Peter Kalm, exploring separately in North America, expressed fears that the commercial trade in ginseng would eradicate the plant in the wild. Today it is seldom found outside of the Appalachians and a few other regions where the natural rhythms hold sway.

My own search for ginseng began when I was growing up in the southern Appalachians. I heard tales about the ginseng hunters who had lived in the mountains, digging ginseng in late summer and fall, hunting and trapping in the winter. It seemed a good life and I decided to become a ginseng hunter.

I found a picture of ginseng in an old encyclopedia when I was about ten. Thereafter in looking for ginseng's five-part leaves, I became the scourge of every five-leaved shrub, digging even Virginia creeper to see if it concealed a ginseng's root. Unfortunately most of my hikes were in the dry second growth forests of oak and pine where ginseng never ventures.

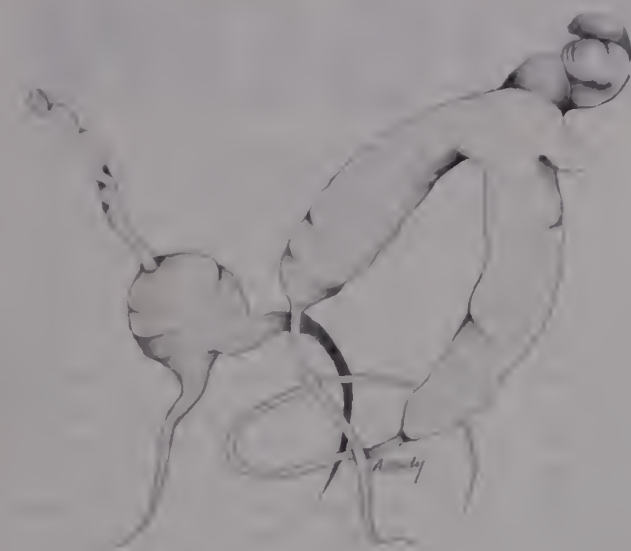
Though I might have found someone who could direct me to the haunts of ginseng, I was shy and preferred the more difficult, solitary route. After many years of searching I would have convinced myself the plant was extinct, at least in my area, but for the local buyers of ginseng. One buyer had a country store in a mountain valley with "Raw Furs & Ginseng" emblazoned on the mailbox, and in the town a junk dealer listed ginseng with the scrap metal, wool, and furs as part of his trade.

My first encounter with a living ginseng plant came when a friend, whose father hunted the root in his spare time, directed me to a spot where he had seen the plant. I did find several plants there, but felt these couldn't be the same race the Cherokee called the mountain climber, for they grew at the foot of a mountain, only yards from a gravel road and vacation cabin. I thought civilization must have sapped the strength of ginseng too, and next it would forsake the mountains entirely and grow in the roadside ditches with the alien, European plants that had followed emigrants to America.

My faith in the wild ginseng was restored a few months later as I climbed a steep mountain hollow. Only those who go on foot can enter this hollow where small waterfalls and slopes of loose stones protect the ancient hemlocks and yellow birches that inhabit the rocky ledges. I had previously searched for ginseng here without success, but this day I found more than a dozen plants scattered between the moss-covered trunks of the fallen hemlocks. Digging one root to carry home, I left the rest to hold their tenure in the rocky mountain hollows.

With passage of the Eastern Wilderness Act of 1974, more national forest will be allowed to return to the natural conditions required by ginseng, increasing its potential range. Recreational use of wilderness areas strengthens the individual and relieves some of the stresses of modern life. Fittingly, it seems that ginseng may offer these same benefits. Research by Russian scientists shows that ginseng root has value as a general tonic and helps the body adjust to harmful stresses.

With the lack of conclusive research the American medical establishment is uncertain of the benefits of



The human-like form of the ginseng root is the basis of its fabled power. Modern medical research is finding there may be some fact behind the myths.

ginseng, but a growing interest in herbal remedies has recently increased its use in the United States. Many modern drugs are derived from nature and the rich Appalachian forests provide a fertile field of study for the medical researcher. Ginseng may one day have a place in modern American medicine though for now it is confined to mountain tonics and natural food stores.

Some ginseng is cultivated, but it is a difficult plant to tame, thriving only where the conditions of its wild habitat are duplicated. Six years are required for a seed to develop into a harvestable root, so it is the wild ginseng that much of the trade is dependent upon.

The pursuit of ginseng can be frustrating. The tight, scarlet berry clusters of jack-in-the-pulpit and the green cones splitting open to reveal the red berries of the cucumber magnolia will seem to taunt the hunter searching for the red ginseng berries, as will the Virginia creeper and wild sarsaparilla with their foliage like the true ginseng.

It takes many miles of mountain walking as well as knowledge of the ginseng to find it. But one day the searcher will be rewarded and in tasting the bitter flesh of the wild ginseng achieve an initiation into the Appalachian wilderness as it existed before the white man discovered it and still exists for those willing to seek it.

Like the Cherokee priests the wise ginseng hunter gathers the root only where there is an abundance and only in the autumn when the berries of the mature plant can be replanted to continue the species. For it is in its mountain home that ginseng is most valuable, as a small part of the rich cove forests of the southern Appalachians, and as part of the living folklore of the Appalachian wilderness.

BISON

in Virginia?

By JIM WIGINGTON
Blacksburg

Illustration by Peter Ring

The bison which lived in Virginia was the first to be discovered by English speaking settlers, and yet it was the last to be scientifically described. In fact, the eastern bison was extinct when Shoemaker gave it the name of *Bison pennsylvanicus* in 1915. Sir Samuel Argoll found the first eastern bison during a trip up the Potomac River in June, 1612. He said:

"As soon as I had unladen this corne, I set my men to the felling of Timber, for the building of a Frigat, which I had left half finished at Point Comfort, the 19th of March; and returned myself with the ship into Pembrook (Potomac) River, and so discovered to the head of it which is about 65 leagues into the Land, and navigable for any good ship. And then marching into the Countrie, I found a great store of Cattle as big as Kine, of which the Indians that were my guides killed a couple, which we found to be very good and wholesome meate, and are very easie to be killed, in regard they are heavy, slow, and not so wild as other beasts of the wilderness."

The bison which Argoll found in the vicinity of Virginia were not exactly like the ones seen earlier by the Spanish explorers Cabeza de Vaca and Coronado in what is now the western portion of the United States. Compared to the typical western bison (*Bison bison*), the eastern bison (*Bison pennsylvanicus*) was larger and darker. They looked almost black, and sometimes would have traces of white around the nose and eyes. Also, the prominent hump at the shoulder of the typical bison was greatly reduced in Virginia's bison.

These huge, black giants of Virginia populated the western portion of the state the heaviest. The numerous valleys of Virginia and West Virginia provided fertile grazing land beside creeks and rivers for the buffalo. Salmon, in his "Present State of Virginia" (printed in 1737), described the journey of Captain Henry Batt to the western portion of early Virginia.

"They set out together from Appomattox, and in Seven Days March reached the Foot of the Mountains. The Mountains they first arriv'd at were not extraordinary high or steep, but after they had pass'd the first Ridge they encounter'd others that seemed to reach the Clouds, and were so perpendicular and full of Precipices, that sometimes in a whole Day's March they could not travel three miles in a direct Line. In other places they found large level Plains and fine Savanna's three or four miles wide, in which were an infinite quantity of Turkies, Deer, Elks, and

Buffaloes, so gentle and undisturbed that they had no Fear at the Appearance of the Men, but would suffer them to come almost within reach of their Hands."

The Appalachian Mountains on the west, and the coastal plains on the east, served as boundaries of range throughout the states of Virginia, West Virginia, New York, Kentucky, and Pennsylvania (center of the eastern herd) for *Bison pennsylvanicus*.

The buffalo in eastern North America became extinct almost as fast as the people moved into the new, unsettled area. The downfall of the bison had been inevitable. It needed unlimited amounts of room in which to live, and the people of the time wanted unlimited amounts of room to expand. Guns boomed, axes fell, fences were built, and the bison no longer had a home in the fertile valleys of Virginia. In 1797, Nathan Boone, son of Daniel Boone, killed the last bison in Virginia, on the banks of the New River (Coues, 1871).

Today the only bison in Virginia are those in zoos or on private farms. But the buffalo did not vanish without leaving its mark. A traveler going through the state could notice such places as Buffalo Forge, Rockbridge County; Buffalo Gap, Augusta County; Buffalo Junction, Mecklenburg County; Buffalo Ridge, Patrick County; Buffalo Station, Nelson County; and the Cow Pasture River, Bath County that serve as reminders of Virginia's largest game animal.

The bison also leaves a more important monument to itself — our roads and railroads. With the help of generations of experience, the bison had created a series of paths through the woods before the white man settled in America. These paths led man across the Alleghenies to the fertile lands beyond. The amazing part of the paths is that they had an ideal grade and covered the easiest terrain. In his "Historic Highways of America," A. B. Hulbert talks about these paths.

"It is very wonderful that the Buffalo's instinct should have found the very best courses across a continent upon whose thousand rivers the white man has proved; and . . . human intercourse will move largely on paths first marked by the Buffalo. It is interesting that he found the strategic passageways through the mountains . . . it is also interesting that the Buffalo marked out the most practical portage paths between the heads of our rivers, paths that are closely followed today, for instance, by the Pennsylvania, Baltimore and Ohio . . . Chesapeake and Ohio . . . Cleveland Terminal and Valley . . . and the Wabash Railway . . .

A rare instance of this is the course of the Baltimore and Ohio Railroad between Grafton and Parkersburg in West Virginia . . . The railway has followed the trail steadily throughout its course, and when it came to a more difficult point than usual, where the railway is compelled to tunnel at the strategic point of least elevation, in two instances the trail runs exactly over the tunnel!"

Who knows, perhaps we will never find another guide as true as the buffalo.



Halstead Shipman Hedges Old Dominion Naturalist

By MARY HOSMER LUPTON

Although few details of the first fifteen years of Halstead Shipman Hedge's life before he came to Albemarle County are known today, his essential pattern of living at one with nature was already established when he first became a Virginian.

During the succeeding eighty-five years, he was to become a pioneer ophthalmologist at the University of Virginia, one of the founders of the Martha Jefferson Hospital in Charlottesville, a Life Elder of the First Presbyterian Church in that city, the 1955 recipient of the Outstanding Citizen of the Year Award by the Charlottesville-Albemarle Civic League, founder and first president of the Albemarle Chapter of the Izaak Walton League, a pioneer in laying out some 40 miles of the Appalachian Trail, a master archer, camper, fisherman and walker.

He was born on September 30, 1867, in West Orange, New Jersey. With his parents, an older brother, and three sisters, he moved to Charlottesville in 1882.

Entering the University of Virginia in 1886, he soon became active in sports there, playing football as guard and tackle on the winning team of 1891 and rowing on the crew.

At that time the Rivanna River was navigable. Subsequently, this river began filling up with sand bars; to an extent which caused a lapse of 80-odd years in the activities of a rowing team at the University of Virginia. Dr. Hedges later explained that this phenomenon was due to the prolonged and excessive cutting of trees on the banks.

He had earned his B.A. degree there in 1889, his B.S. and old M.A. in 1890. He was graduated in Medicine in 1892, the last year the one-year curriculum was offered. In spite of its brevity, this medical course must

have been intensive as we are told that the only holiday was Christmas Day, and if that fell on a Sunday...

After interning at New York City Hospital and Orange (New Jersey) Memorial Hospital, the young Dr. Hedges returned to the University of Virginia as a demonstrator of anatomy.

In 1899, he had opened his own office in Charlottesville for private practice, which in 1924 he restricted to eye patients. He was among the first surgeons in the United States to perform a corneal transplant and was to become a distinguished member of the American College of Surgeons. In 1902, Dr. Hedges married Miss Pernette Virginia Spencer of Charlotte Court House, Virginia.

When they were very young men, he and his older brother, Charles, hiked from Georgia to Virginia along the ridges of the mountains, as he recounted to his friend, neighbor, and frequent camping companion, Laurence A. Brunton of Charlottesville. This was long before the opening of the Appalachian Trail, a portion of which Dr. Hedges was to lay out himself. The young Hedges brothers had started from Georgia with forty-pound packs on their backs. As the days and the miles passed they discarded one item after another, which they increasingly found unnecessary, until they arrived in Virginia, each with a serviceable ten-pound backpack. They completed their trip through the rough, unmarked country in six weeks.

Halstead Hedges was a lifelong gun expert and a collector of antique firearms, many of which were given to him by grateful patients.

His favorite was an ancient flintlock which he always kept in operating condition along with all the rest of his guns. The flintlock had been presented to him after he had performed a double cataract operation on the young son of a mountaineer. Dr. Hedges stayed with the family in their small, mountain cabin for two weeks while the boy recuperated from his operation. On leaving, he refused any payment and was given the rifle "to remember them by."

But when it came to hunting, he was strictly a bow and arrow man. Frequently he made his own weapons; his bows of osage orange wood which he cut and seasoned himself, the strings waxed with beeswax.

In 1957, when he was ninety, the Albemarle Archers presented him with a silver cup in recognition of his "outstanding work in encouraging archery in Virginia."

He was canoeist *par excellence*. From his days in the 1880's on the crew at the University, he was a tireless oarsman. He took many long canoe trips in the north Canadian wilds; on one of which he was employed by that government as "an expert canoeist" in the work of controlling a massive forest fire.

In a time which preceded the term "noise pollution," he expressed his abhorrence of attaching a noisy, smelly outboard motor to "the most beautiful craft in the world--the canoe."

(continued next page)

HALSTEAD SHIPMAN HEDGES

At eighty-seven, he paddled a canoe down the Chickahominy River, while his old friend and hunting companion, Dr. Stanislaw Makielski, shot ducks.

All his life, Dr. Hedges's walking ability was legendary. In the 1920's he laid out some forty miles of the Appalachian Trail in Virginia from roughly ten miles north of where Route 211 from Sperryville to Luray crosses the mountains southward beyond Afton Mountain to Humpback. In subsequent years, he walked this part of the Trail with Floyd Johnson and Hollis Fitch of Charlottesville to keep it open.

During most of his life he thought nothing of walking from his home on Park Street to Sugar Hollow, fishing all day and then walking back home—some twenty miles each way. And he was walking while he fished, of course.

At "Leeland" in Charlottesville where, during the last several months of his life he was resident when not out on expeditions with relatives and friends, he was at ninety-nine still taking daily walks, one of which entailed climbing two fences.

C. C. Wells of Charlottesville, a frequent camping companion of Dr. Hedges, gives the doctor's basic precept of the art of camping. "If you have an accident, or unforeseen mishap while camping, you have labeled yourself a poor camper; for a wise one would have foreseen, and allowed for, the accident."

Over the years, Dr. Hedges camped frequently at what was called Big Flat, some twenty-five miles north of Afton on the east side of the mountain. (This was before 1935 when the Shenandoah National Park came into official existence.) There were no roads into the area, and it was necessary to park one's car and hike up the mountain. Today Big Flat is called Loft Mountain and is a large, organized camping site with tent and trailer spaces, tables, flush toilets, showers, ice, a laundry and a store. But it's still wild for black bear, and rattlesnakes roam through the area today.

Dr. Hedges went on his last, long, out-of-state camping trip at the age of eighty-seven to a wilderness area in Ontario, Canada, accompanied by his two oldest grandsons, Sam Clark, Jr., and Halstead Hedges Clark, and his old friend, the late Jack Gitchell of Harrisonburg.

Through the cares and vicissitudes of more than 100 years of living, he found solace and a refreshing of the spirit in prayer and in getting close to nature. Whether on camping trip with friends or sleeping out alone over night in the mountains above Jarman's Gap, he found his way "of getting the cobwebs out", as he put it.

One of his most frequent companions speaks of sitting with him around a wilderness campfire with no words spoken for an hour or more but with their communication deep and unbroken.

Halstead Shipman Hedges died serenely on September 19, 1968, eleven days before his 101st birthday.





A Look at Virginia-1607...

By ULRICH TROUBETZKOY

Richmond

Although there were no scientific naturalists at Jamestown in 1607 and few during the rest of the century in Virginia, the settlers made up for it in wonder and curiosity and a desire to write home about everything they saw. They have left us a remarkably full account of what the wilderness was like, from lowly chigger to lordly Chesapeake.

Fresh clean water was what delighted the seafarers most of all after their months on shipboard. George Percy described how pleased the first adventurers were by the clear streams they found when they

landed at Cape Henry. In the 17th century, all vessels leaving the James River on their outward voyages took on a supply of water from a spring at Newport News. "All ships came here to take in water on their way Home," wrote Devris in 1633.

It was claimed, however, that Virginia spring water required more malt in the making of beer and that soap did not lather as freely as in English water. Despite its rusty color, the special resistance to spoilage of the acid water from the Dismal Swamp made it particularly desirable for long voyages.



Kesteloo



Captain John Smith described the bland sweetness of a spring from which he and his men had drunk at Arrahattock during the voyages of exploration to the present site of Richmond in 1607. There is still a spring on a bluff above the James at Varina whose water matches Smith's description, and the property on which it is located is called "Arrahattock."

The greenness of Virginia looked good to men who had spent cramped, tedious months at sea. Even as those in the first three little ships were sailing between the capes,

they could smell the pines across the water. On the southern side of modern Hampton Roads, Captain Smith saw "the shores overgrown with the greatest pyne and firre trees we ever saw in the Country."

Coming from a nation of shipbuilders and seafarers, the adventurers looked appraisingly at the lofty trees along the banks of Virginia rivers, already seeing the straightest and tallest as masts and spars for English rigging. The ship *Starr*, sent to transport masts in 1612, was unable to store even 40 of the 80 trunks ready for shipment

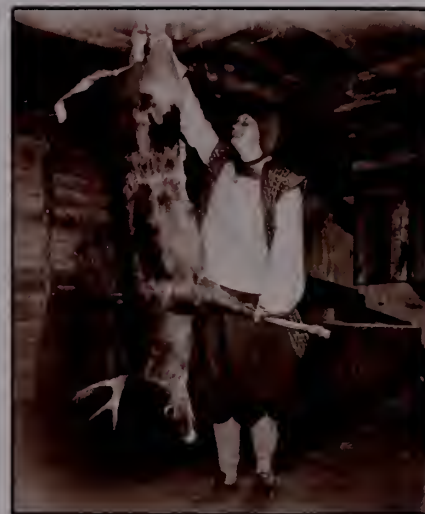
until they had been shortened with an ax. A letter from the Governor and Council in Virginia to the Company in London in 1622, however, made the statement that the pines were so dispersed that pitch and tar could never become staple commodities in the colonies.

Freedom from undergrowth was one of the noticeable features of the original woods in Virginia. There were so few thickets that, according to Captain Smith, the colonists could arrange a perfect order of battle among the trees. One story that was told back home in England



Strachey described the flights of wild pigeons as resembling "thickened cloudes" and Hamor asserted that it took three or four hours for the flocks to pass a single point. The last passenger pigeon died in the Cincinnati Zoo in 1914.

The white-tailed deer was the principal large game animal in aboriginal as in present-day Virginia. The deer survived the ruthless hunting of the Indians who ringed their game with fire and slaughtered bucks, does and fawns alike. There are still many deer in the peninsula swamps in spite of the growth of cities, towns and military establishments and despite continued hunting.



Kesteloo

they could be made into timbers 20 yards long and 2½ feet wide.

The early settlers called hickories "walnuts," but true walnuts were also plentiful and the black variety came to be valued highly for furniture. The chinquapin grew in the thin soil of the ridges. There were hazelnuts in the swamps and also at the heads of the rivers.

Near the falls of the James, where Richmond was later to be established, chestnuts were numerous and the size and flavor of the nuts were compared favorably to those of Spain, Germany and Italy by early colonists who had travelled in those countries. The site of Richmond was visited only a short time after the first settlers landed at Jamestown in May of 1607.

There were beautiful groves of mulberry in some parts of Tidewater. Later there would be experiments with silkworms and the production of silk. The quality of Virginia silk was reported fine, but apparently its manufacture did not seem economically feasible.

The ash was a common tree and the settlers were soon busy converting the trees into potash for shipment to England where it was used in making soap and glass. Potash was also needed for the glasshouse at Jamestown. Sassafras was common then as now and so plentiful on Jamestown Island that the colonists neglected their cornfields to secure it during the early years of the settlement. Flowering locusts and tulip poplars were among the trees noted by the historian, Robert Beverley.

The only native apple tree was the

crab apple, but English varieties soon were being grafted onto the wild stock, which Ralph Hamor reported to be much less sour than the English variety.

Peach trees were recorded as being at Kecoughtan as early as 1633. There were three varieties of cherries and two kinds of plums resembling English damsons mentioned in early literature about the colony. Smith described persimmons as fruit that puckered the mouth if eaten when not entirely ripe. Later colonists used them for brewing beer. It is likely that hunters then as now often took stands near persimmon trees which have always been attractive to the white-tailed deer.

The Jamestown settlers found the myrtle bush--or bay--as abundant as they are today around tidewater marshes. Later the early Virginians learned how to make a transparent greenish wax from bayberries that did not melt in hot weather. Bayberry candles gave off a pleasant pungent perfume instead of a tallow smell when they were snuffed.

Wild hops in fertile ground, acres of wild onions, muskmelons, squashes, may apples, beans and pumpkins were already growing in Virginia, but the watermelon and sweet potato were introduced during the 17th century.

The tobacco and maize the settlers saw growing in Indian gardens were to exercise a controlling influence on the fortunes of the colony. John Rolfe, who was married to Pocahontas, began experimenting with tobacco culture in 1612 and proved it could be a profitable

was that it was difficult to keep greyhounds in Virginia because in their headlong speed they dashed their brains out against the trees!

The cedars of the Old Dominion were compared favorably to those of Lebanon. In the Dismal Swamp were tall stands of "juniper," actually white cedar. The settlers claimed to have measured cypresses three fathoms (18 feet) at the roots and 60 to 80 feet tall.

To men from England, the oaks were bound to attract attention. According to Smith, the Virginia oaks were so tall and straight that



The colonists often depended on their firearms for both food and survival. The colonial gunsmith was a busy craftsman and by the 18th Century had developed the manufacture of firearms into a fine art.

The Indians of Tidewater Virginia made good use of the wildlife resource for both food and clothing. They also made spacious dwellings from native materials.

A 17th Century Virginian tends his garden. Raising food was an important, though not always successful, part of early colonial activities.

parts as far as botanical technicalities were concerned. Visually, however, they must have been satisfactory stand-ins for the homesick settlers.

Captain Smith observed the soil of the new country in 1607. The narrow point of land at Cape Henry reminded him of the drifted sand of the English dunes. He noted the great fertility of the valley of the Powhatan (now the James River) and remarked on the deposits of marl or Fuller's earth and evidence of iron. The first iron works in America were set up in 1619 on Falling Creek on the south side of the James, not far below present Richmond. Unfortunately, the enterprise was destroyed by the Indian massacre of March 22, 1622.

In general, Smith described the soil as sandy black loam, interspersed with thick clay and beds of barren earth and stone. On a visit to the Eastern Shore, he observed that the territory of the Accomac was composed of fertile clay; today much of it is devoted to large commercial truck gardens.

There is much evidence that wood bison (buffalo) at one time ranged east of the mountains, although they have long been extinct throughout Virginia. There were small, ravenous wolves and, in the next century, John Clayton (1693-1773) said they sounded like a pack of beagles hunting in the night. They too are gone.

The bears encountered by the first adventurers were small but numerous in what is now the Virginia Beach - Norfolk area. Gradually they retreated into the Dismal Swamp which many still inhabit today. The Indians reportedly had a particular



money crop for export to England. Jefferson may have been the first who called attention to the fact that the early colonists failed to record whether tobacco was indigenous to Virginia or whether tillage was always necessary. Jefferson himself surmised that it was of tropical origin, transmitted from tribe to tribe until it reached Virginia.

The Indian grain called "mattoun" bore a resemblance to rye and may have been the same as the "wild oats" still so common along tidewater rivers. The settlers found that they could make cordage and linen from the water flags. Sumac leaves, puccoon and snake root were used for dyeing and for medicinal purposes. Jamestown or "Jimson" weed was the source of many tall tales of its sinister powers as a hallucinatory drug. There were numerous varieties of sorrel and parsley in the woods and extensive fields of wild flax.

At Christmas time there were two reminders of home: the holly and the mistletoe. Both were a little different from their English counter-

William Strachey wrote about oysters 13 inches long, probably including the shell. Oyster banks rose above the surface at ebb tide in some of the rivers like rocks in the bed of a stream. In 1609 one group of starving colonists survived for nine weeks on oysters and one pint of Indian corn per week. Mussels were especially abundant at Weyanoke. They found two kinds of crabs, one reportedly large enough to make a meal for four men.



Kes teloo

fondness for bear meat. Another Indian delicacy was beaver tail and it should not have been hard to come by when beavers lived in all the streams suitable for building dams.

Raccoons and opossums were described as "monkeys" in letters to England. William Strachey wrote: "The Rackoone I take to be a species of 'Monkey.'" By 1739 Clayton was reporting that porcupines were becoming scarce, but there were still many otters, wildcats, skunks and marten as the first settlers had noted.

The Jamestown settlers had found gray foxes and flying squirrels. The latter were much in demand by noblemen for their parks in England and by naturalists for their collections. King James I particularly wanted one of the delightful pets.

Cottontail rabbits and bobwhite quail were apparently less numerous than they are now, since the wilderness did not favor their spread as do open fields near farmsteads. There were more rabbits noted on the open land near the falls--now Richmond--than in the forests around Jamestown.

Naturally the Virginia mosquitoes and redbugs, or "chiggers" attracted unhappy attention. Bullfrogs and tree frogs were described by the colonists who had as much trouble locating the peepers as do their descendants. Clayton recorded rattlesnakes toward the end of the century. Harmless snakes were common and during the starving time the colonists were not squeamish about eating them, as well as dogs, rats, mice and "all the quick things that were there."

In the early days of the colony,

the rivers were described as teeming with fish and it was said that they were so thick in the Chesapeake Bay that lazy settlers scooped them directly into their frying pans. Shad were often a yard long. The sturgeon, rockfish and herring were countless. Even allowing for the elasticity of fish stories, Virginia waters really did teem.

In retrospect, reports of wild fowl sound even more fabulous than those of fish, especially as they were drawn in the fall to the heavy growth of wild plants along the Atlantic flyway. The settlers noted swan, wild geese, many varieties of duck, plover, snipe, woodcock and curlew. Although there is no specific reference to the rails and sora, they were surely plentiful in the gold brown autumn marshes. Perhaps the apparent oversight is merely a matter of terminology and "snipe" was intended to cover them all.

The first birds described by the settlers were the redwing blackbirds, still plentiful, and the wild turkeys which survive in most of Virginia, but in diminished numbers.

The mockingbird was an object of wonder and admiration. So was the cardinal which the settlers called "carnation bird" and "Virginia nightingale."

There are few specific references in the early narratives to the wild flowers of Virginia, though George Percy compared the fields around Jamestown to an English garden. The familiar rose and violet were among the few mentioned, though the honeysuckle must have been here and the flowering dogwood surely lightened the primeval woods.

Even before the settlement of Jamestown in 1607, a study of plant and animal life had been published (1590) by Thomas Hariott, of the Roanoke Colony, who ventured as far north as what is now Norfolk and published His Brief and True Report of the New Found Land of Virginia. Many seeds, cuttings, live and pressed plants sent from Virginia stimulated curiosity and study by naturalists in Europe, including Carolus Linnaeus (1707-1778), "father of modern botany." Most thorough of the early botanists in the colony was John Clayton who collected extensively in eastern Virginia, and made some expeditions into the piedmont. John Mitchell, who settled on the Rappahannock at Urbanna about 1700, is better known as a cartographer, but he too collected widely and is honored by the scientific name of the partridgeberry, *Mitchella repens*.

Thanks to all these men who kept journals, wrote letters, made drawings and published books, we have a remarkably good idea of how Virginia looked while it was still wilderness and of how its gardens and plantations were begun.



R. Stuart Purks, now Assistant Chief of the Game Commission Law Enforcement Division, in uniform, circa 1939.



The First 200 Years

by JACK RANDOLPH
Commissioner, Fourth District

Benjamin Franklin was a shrewd old bird; perhaps as shrewd as a wild turkey, which as any turkey hunter knows, is the supreme compliment. It was Franklin who suggested that the gobbler be designated the national bird of the United States, but as we now know he did not prevail. The fierce and majestic bald eagle was chosen over the wily but equally majestic turkey.

If Mr. Franklin nominated the turkey because he believed it would endure as well as our nation, his choice was a wise one. Now, two hundred years later, we find the turkey thriving all over our land while the eagle is tottering on the brink of extinction.

A comparison of the fortunes of these two great birds offers a classic example of many of the basic problems that face wildlife and wildlife management as we reach our landmark two hundredth year. This, of course, is the conflict between human emotions and the biological facts of life.

The wild turkey, while heavily hunted, has had the benefit of the best that wildlife management has to offer. Through intensive basic research, later applied through careful range management, judicious restocking and intelligent management of open seasons and bag limits, the national wild turkey population has made a spectacular comeback. Not only has this regal bird been restored to its former range, but turkey popu-

lations now exist in many areas where they never before were found.

The bald eagle, on the other hand, is not a game bird and cannot be legally hunted. Until recently, the only management tool applied to eagles has been the benefit of total protection; if total protection can be called a management tool. The bald eagle, a bird of prey, itself fell prey to two of the most insidious destroyers of wildlife; misdirected human emotions and the advance of modern technology.

Despite total protection and the threat of heavy fines, hundreds of golden and bald eagles were hunted down and killed. They were tried and convicted of livestock killing by ranchers armed with nothing but emotion, completely innocent of supporting biological facts.

The insidious hand of modern technology also began to squeeze the life from our national bird. Persistent pesticides, particularly DDT, found their way into the eagles' digestive tracts. Within the birds, the DDT formed a substance that inhibited the formation of egg shells. When the eagles nested they produced eggs with shells so thin they broke when the bird tried to incubate them. The DDT threatened to rob the eagles of their future.

Emotions in matters concerning wildlife run deep, so deep that many wildlife managers concede that wildlife management is more often a case of people manage-

(continued on page 24)



VIRGINIA FEDERATION 11th CONSERVATION AWARDS PROGRAM

Will America's resources last 200 years more?

The Virginia Wildlife Federation believes that those who work so tirelessly to save and conserve America's priceless natural resources should receive public praise, recognition and appreciation. No nation has been more blessed with natural riches and beauty. No nation can remain strong, its people healthy and happy, its way of life full, rich and meaningful, without wise use, conservation and preservation of those same priceless resources. By recognizing and encouraging conservation leaders the VWF believes America's future can better be secured. Virginia Wildlife readers are invited to nominate their favorite conservation leaders for one of this year's conservation awards. What better way could there be to assure a rich and beautiful America for 200 years more?

Sponsored by The Virginia Wildlife Federation and Sears Roebuck and Co.

CATEGORIES

Conservation Educator
Conservation Organization
Soil Conservationist
Water Conservationist

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Forest Conservationist
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River Conservationist

Youth Conservationist
Conservation Communicator
Conservationist of the Year

Virginia Wildlife Federation INCORPORATED CONSERVATION AWARDS FOR 1976 NOMINATION FORM

To make a nomination, send two (2) copies of this form and all attachments to: Conservation Awards Center, P.O. Box 3431, Norfolk, VA 23514.

NOMINEE:

RECOMMENDED BY:

NAME _____

NAME _____

COMPLETE ADDRESS _____

TITLE _____

AWARD CATEGORY _____

COMPLETE ADDRESS _____

Please specify one of the eleven categories for which nomination is made. Use a separate nomination form for each award category and for each individual or group nominated.

NAME OF MEMBER CLUB _____

DATE _____

Please attach two (2) copies of a resume of achievements not to exceed two typed pages. Include organization memberships, affiliations, past achievements, past recognition, specific acts for which recommendation is based, and other references for comparison. A full documentation is needed by the judging committee.

NOTE: NOMINATIONS MUST BE POSTMARKED NO LATER THAN MIDNIGHT, AUGUST 15, 1976.

Ghost from the Past

By JIM WIGINGTON
Hillsville

As the morning sun struggled over the Blue Ridge Mountains and poured down on the valley below, a silvery, grey ghost appeared in the early light. The ghost could dwarf any man, as it stood lone and proud, seeming to reach for the sky and cry for help. This was the ghost of a mighty chestnut tree, a dead snag that had resisted wear and decay since its death 40 or 50 years ago. It was a reminder of the mighty chestnut forests of the past.

At the turn of the century, the American chestnut tree was a dynamic part of the eastern forest ecosystem. The chestnut could be found as far north as Massachusetts and southern Maine, and westward from southern and central New York to southeastern Michigan and southern Illinois, and south to Alabama and Mississippi.

Virginia was blessed with tremendous chestnut forests. Only the southern coastal plain was devoid of the versatile tree. On western Virginia's mountain slopes one of the most complex forest ecosystems outside of the tropic regions existed. Giant yellow poplars, tall white pines, massive oaks, and towering chestnuts comprised a significant portion of the forest complex.

Chestnut trees grew amazingly fast, even on the rocky, dry soils of mountain ridges. They were tall, straight trees, with exceptionally deep root systems. They commonly reached heights up to 90 feet, and diameters of 3 to 4 feet. Annually, chestnut trees produced great quantities of large, meaty nuts. The meaty prizes were protected by a formidable covering of spines.

Virginia's mountain people took advantage of the abundant source of food, which the chestnut trees provided. Hogs and cattle grazed in the woods, growing fat on the nuts. Chestnuts became a staple part of the mountain family's diet. In addition, the mountain folk sold chestnuts to local markets, and to people passing through the area, providing much needed "spendin' money."

Besides the nuts, chestnut trees had many other uses. Tannin from the bark of chestnut trees helped support a regional leather industry. The rot-resistant chestnut wood was the source of millions of railroad cross-ties, and millions of telephone and telegraph poles. Buildings, homes, and fences built from chestnut

lumber required little maintenance, and no paint. Today, in Virginia's mountains, many buildings, constructed of chestnut wood a hundred years ago, are still standing, and old chestnut split rail fences are still used to control livestock.

During the late 19th and early 20th century, the possible extinction of the American chestnut seemed impossible. But in 1904, a fungus, *Diaporthe parasitica*, was discovered on a few Chinese chestnut trees, *Castanea mollissima*, which had been imported to the New York Zoological Gardens. The fungus soon contaminated American chestnut trees, *Castanea dentata*, and rapidly spread across New Jersey, and into the mighty chestnut forests of Pennsylvania. Federal programs fought to stop the chestnut blight, but with little results. The chestnut blight killed all the mature chestnut trees in its path, as it spread west and south.

The chestnut blight reached Virginia in the 1920's. Richard C. Davids, in his book, *The Man Who Moved a Mountain*, talks about life in the Virginia mountain counties of Floyd and Carroll. He states that the people of this area thought that 1929 was a bewitched year, the year the chestnuts died. Some people even thought it was a visitation of the Lord, because of something evil. By the early 1930's probably all of Virginia's mature chestnut trees were dead.

Today, the American chestnut is still in poor condition. Sprouts spring up from old stumps and root systems. However, the sprouts are usually short lived, rarely bearing nuts more than one season. Isolated pockets of mature trees exist high in the Smokey Mountains, but these trees are not resistant to the blight. Elevation or some unknown factor must have spared them.

Various agencies and organizations are currently conducting research to find a blight resistant strain of American chestnut. Genetic crosses between blight resistant, Asian chestnut trees, and American chestnut trees, have produced blight resistant prodigy. However, few of the new strains have the good form, and the rapid growth that makes the American chestnut a desirable tree. Attempts to use radiation to produce genetic mutations, which are blight resistant, have been disappointing.

Perhaps one day, research will return the American chestnut tree to a viable position in Virginia's forests. Until that time, we will have to be content with reminders from the past.



Gillam



Dead chestnut snags throughout the Appalachians are monuments to this great American tree. Its durable wood can still be seen in rugged cabins and twisting rail fences. Once Virginia's greatest timber tree, only bleached skeletons and sickly sprouts remain.

sassafras

Photographs courtesy of U. S. Forest Service



by KAY M. FLEMING
Wildlife Technician

Texas Division of Parks and Wildlife

"Wonder drugs" make headlines whenever they are discovered, and the New World's sassafras tree with its miraculous medicinal roots was no exception in the 1500's. Tales of this cure-all were carried back to Europe and, until it proved not to be the medical wonder claimed, demand for the root was widespread.

History and folklore associated with the sassafras predate the pilgrims, but today the tree has all but been forgotten. A few old-timers still brew a kettle of sassafras tea in the spring, but to most Virginians, sassafras is just another unknown tree in the woods.

Sassafras albidum is a member of the distinguished laurel family, Lauraceae. It is the only member of its genus found in America. Only two other species of sassafras exist in the world, one native to the island of Taiwan and the other to the mainland of China. It is a common invader of abandoned fields, fence rows and cleared woodlands, but may be found throughout the state.

Sassafras, like most of the broadleaf

plants, has deciduous leaves. With the first warmth of spring, its tender leaves emerge and begin to take form. Three different leaf shapes are common on the tree and all are likely to appear, even on the same branch. The pale green leaves may take a one-lobed, oval shape; a mitten shape with two lobes; or they may have three lobes, similar to the mitten shape but with an additional lobe.

Small greenish-yellow flowers bloom in early spring forming clusters as the leaves unfold. Only a close inspection of the branches will reveal the blossoms because they blend so well with the leaves. A tree will have either staminate or pistillate (male or female) flowers. This characteristic makes each tree unisexual and only the female tree will bear the fruit and produce seeds.

By late summer the tree begins to brighten the woods with flashes of color as its leaves paint a yellow-orange and blood-red iridescence through the forest. It is during this time of year that the tree bears fruit — oblong-shaped, dark blue drupes which are held in small red cups at the end of each scarlet peduncle (stem). Although unsuitable for humans to eat, these thin-fleshed fruits offer wildlife a spicy addition to their fall menu.

Sassafras wood is highly aromatic and

its odor is similar to that of root beer. It was used by pioneers for fence posts and firewood, but its remarkable odor led to more unique uses.

Insect infestations were among the many problems which pioneers sought to solve with sassafras. They must have thought that anything as aromatic as sassafras just had to repel bugs. Bedsteads were built of the wood to keep away bedbugs, and even entire floors were laid of sassafras. Early West Virginians constructed hen houses of sassafras in hopes that its odor would repel chicken lice. Any place where insects were a problem probably smelled of sassafras.

Early American superstitions about sassafras increased with each dream the pioneer had, and he must have really dreamed. Kentuckians were convinced that the only way a good bar of lye soap could be made was with the aid of a ladle made of sassafras wood. They believed that if the pot of cooking soap was stirred with anything but a sassafras stick, the soap would not turn out well. Some New Englanders considered the burning of the wood bad luck; and in the Ozarks, if sassafras popped while burning, it was a sign of death.

Folklore associated with sassafras began almost with its discovery. As early as 1562,



Three different leaf shapes are common to the sassafras, and it is not unusual to find them all on the same branch (extreme left). When ripe, the tree's fruit (center) appears as oblong-shaped dark blue drupes held by small red cups. The small greenish-yellow flowers (left) bloom in early spring forming clusters as the leaves unfold.

French colonists in America were repeating Indian tales about the sweet-smelling wood. The American Indian was convinced that liquors made from the roots of sassafras possessed miraculous healing powers.

In 1577, Dr. Nicholas Monardes, known as the "Physician of Seville," described the powers of sassafras in a book titled: *Joyfull Newes From the West Indies*. He thought sassafras was a cure for just about everything. He claimed that sassafras was a remedy for "large importunate fevers," "griefes of the breast caused by cold humours" and "griefes of the head." He wrote that sassafras distillants would "comforteth the liver and stomacke" and that it was good for "them that be lame and creepelles and them that are not able to goe."

Tales of such a wonderful-tasting, pleasant-smelling cure-all increased the demand for sassafras almost immediately. Every Englishman was soon scrambling for the new "wonder drug." Expeditions to America sought sassafras in addition to the normal requests for furs and cedar logs. A voyage to America was almost always successful if they could return with a load of sassafras root. The root was worth 336 pounds sterling per ton in Britain, almost enough to cover the cost of the expedition.

Early American settlements quickly sent shipments back to Europe. Captain John Smith included sassafras with his first exports from the newly established Jamestown colony and for several years the famous London company requested sassafras as one of the principal commodities from the new colonies.

Sassafras soon proved not to be the medical wonder claimed and its popularity in Europe diminished. Only on the American frontier did its legends persist. On the frontier it was still regarded as a spring tonic to "thin the blood" or prepare the body for summer's heat. Juice from the root was used to cure colds, bring down fevers and relieve rheumatism pains. The American Indian continued to use powdered sassafras leaves on wounds and solutions of the juice as an eye wash to relieve sore eyes.

By the 1800's sassafras tea had become a regular spring tonic in many American homes. The roots could be dug or purchased in almost any drug store and most rural families toasted the new spring with a cup of sassafras tea. Sassafras bark was being used as an orange dye and the distinctive flavor of sassafras was used to perk up the taste buds. Candies, medicines and drinks were all being flavored with the root. Any old west movie fan will remem-

ber the good guy "bellyin' up to the bar" for a cool bottle of sarsaparilla, sassafras' version of the soft drink.

Settlers in Louisiana began using the dry, powdered leaves of sassafras to thicken and flavor their foods. It was cooked in soups, sprinkled on Creole dishes and used to make the highly seasoned Cajun dishes like "filet gumbo." The excellent preparation used for boiling crabs and shrimp also contained sassafras leaves.

The commercially prepared spice, sold in the grocery store and labled "File," is just our old friend sassafras. A thrifty housewife can gather a handful of tender leaves, dry them in her cupboard and have a ready supply without spending a penny. I string the leaves on thread and keep a supply hanging to dry so they will be ready for use.

To try your hand at brewing sassafras tea, all you need is a teapot, a little sugar and a few pieces of sassafras root. Old-timers claim that spring is the best time to dig roots because the "sap is down" but tea can be brewed during any season with a little sacrifice of flavor. If a small tree is located, a section of root about the size of a pencil can be used. A chunk off one of the main roots of a large tree and about the size of your thumb will be adequate for several cups of tea.

When boiled, sassafras will turn the water a red-orange color and, with a little experimenting, you will learn how long to boil it and how much sugar to add for your particular taste. Some tea drinkers boil the roots for one minute and then let them steep for three.

When sweetened and chilled with a few ice cubes, sassafras tea hits the spot. On a warm spring day, a nostalgic sassafras sipper like me can lie back under a shade tree and dream of the American frontier, the wild west and "bellyin' up to the bar" for a cool sarsaparilla.

There must be a few dreamers like me left because the old-fashioned tradition of drinking sassafras tea still lingers in the woods of Western Virginia. What used to be a spring tonic to many early Americans is now only a friendly touch with the past and a link with our frontier heritage.

The eastern blacknose dace (above) and southern blacknose dace (below) are typical of the small, colorful fishes that inhabit Virginia's inland waters. Human activities increasingly threaten the natural habitat in which many such little-known fishes have survived for thousands of years.



An Ichthyologist Looks at Virginia

By ROBERT E. JENKINS, NOEL M. BURKHEAD,
DIANE J. JENKINS
Roanoke College and the University of Tennessee

The Old Dominion contains a highly varied and fascinating fauna of freshwater fishes. Some of the species are widespread and renowned game or food fishes.

Big Stony Creek, in Sussex County, a typical tributary stream.



But a multitude have a small range of occurrence, are diminutive in size, and generally are poorly known, even though they may be handsome or in many cases strikingly beautiful. The fishes occupy a great diversity of habitats and exhibit a wide array of behavior. Although certainly not household words, the names of many Virginia fishes are poetic. Consider the Tippecanoe darter, the golden, orange, and bluish, one-inch-long males of which are rarely seen even by scientists, and when found in Virginia they occur only in swift water over pea-sized gravel in Clinch River. Other interesting names come to mind - satinfin shiner, stoneroller, cutlips minnow, golden redhorse, bigeye jumprock, tadpole madtom, flier, warmouth, rainbow darter, snubnose darter, sawcheck darter. A six-inch adult from Salem was named the king of darters - *Percina rex*, and its common name is derived from the river drainage to which it is confined - Roanoke logperch. This darter methodically flips over stones in search of secretive aquatic insect larvae. Stone mound nests of the hornyhead chubs, genus *Nocomis*, are evident during spring in a great many Virginia streams, but few persons have actually had the treat of watching nests being built and the flurry of color of other minnows also spawning over these nests. Some species are drab but nonetheless interesting. Such is the recently discovered duskytail darter, found in a single Virginia creek and presently only two other streams in Tennessee. This fish has been proposed as a threatened species even before it has been validly described!

Perhaps surprisingly, the period of scientific exploration for and discovery of Virginia fishes spans little longer than one century. The earliest survey was in 1867, when then young Edward Drinker Cope, a famous student of living vertebrate animals and

Map showing sites where samples were collected in this current inventory of Virginia's freshwater fishes. Results and conclusions from this inventory are to be published in book form, probably titled "The Fishes of Virginia."



dinosaurs, seined numerous streams in the south-western part of the state. Many of the fishes encountered were widely distributed and had already been described from collections from other states, but Cope recognized and described numerous new species. He even made an analysis of patterns of distribution, but was hampered by incomplete knowledge of the fish faunas of the various drainages. Cope was succeeded by David Starr Jordan, a world renowned ichthyologist, humanitarian, and the first President of Stanford University. Jordan and colleagues worked in 1888 at several of Cope's collection sites and others in the central and western parts of the state. A number of species that had been missed by Cope were recognized and made known to science.

Little ichthyological survey occurred in Virginia from Jordan's time to about 1940. Few collectors passed through the state, and the few descriptions of new species were based at least partly on material from other areas. The year 1940 marks a rebirth of extensive exploration and study of Virginia freshwater fishes, activities which have persisted to the present. In that year Edward C. Raney made his first of several lengthy forays from Cornell University. He was accompanied or succeeded by several of his many students. Thus much of the survey and subsequent study has been academically based. Fishery biologists of the Virginia Commission of Game and Inland Fisheries, the U.S. Fish and Wildlife Service and Department of Agriculture also have provided considerable data. In particular, the 1975 segment of the Virginia Trout Stream Survey generated important information on many headwater species. Since 1940, 10 species have been described from Virginia, and numerous others were encountered for the first time in the state.

Virginia has been fortunate to have yielded to the nets of many of the country's best known and other qualified ichthyologists. Much of the basic explorative work has been accomplished. However, indications of needs for continued effort are apparent. Descriptions of three Virginia species have yet to be published, and there are more than 10 described species of highly probable occurrence within state limits. Some fishes currently regarded as subspecies may actually be different species. For example - are the two pictured breeding males of blacknose dace, collected together at the same locality in the upper James River drainage, the same or different species? We know little or nothing about fundamental aspects of the life of many species, such as food habits, breeding sites and behavior, identification of eggs, and ecology of young stages. Despite these gaps, a need has been recognized for assembling present knowledge into a book to present what is known of the freshwater fishes of the state. For the past 10 years the first author has been systematically gathering and summarizing data leading toward such a book. Visits were made to virtually all institutions, 18 in number, in the United States that house more than a few collections from Virginia. Staff members of several other institutions or agencies also provided data. Records from about 4100 collections or observations, 509 of which are from our fieldwork, are at hand.

The locality dots on the accompanying map show broad state coverage, generally the most intensive in montane areas. Areas particularly worthy of future survey include the Big Sandy drainage in the south-western part of the state, middle and upper portions of James River in the mid-central part, the main channel and tributaries of Dan River and lower Roanoke (Staunton) River (where many of the existing records

are of only game fishes) in the south central part, and tributaries of the lower Potomac, Rappahannock, and York rivers.

The current composite total of fish species known from Virginia freshwaters stands at 205, classified among 28 families. The most speciose groups are those with mostly diminutive species - shiners and darters with 31 and 47 species respectively. The total conservatively includes 23 species that for spawning migrate into or from brackish or more saline waters, such as the sea lamprey, two sturgeons, the American eel and four species of shad or river herrings, and other estuarine inhabitants, as the menhaden, bay anchovy, Atlantic needlefish, marsh killifish, tidewater silversides, two sticklebacks, white perch, and hogchoker, that may frequently enter freshwater. Others of these 23, threadfin and gizzard shads, alewife, banded killifish, mosquitofish, and striped bass, have native or introduced populations dwelling permanently in fresh water. Also notable is that several fishes typically thought to be strictly freshwater ones are occasionally found well downstream in estuaries. A recent comprehensive list of freshwater, estuarine, and marine fishes of the Chesapeake region has been published by John A. Musick of the Virginia Institute of Marine Science. The number of estuarine and marine species in Chesapeake Bay - 209 species - is similar to that of Virginia fresh waters.

Nine species were introduced to Virginia, as transplants from other states (threadfin shad, rainbow trout, northern pike, muskellunge, fathead minnow, redear sunfish) or as exotics from other countries (brown trout, goldfish, carp). Several additional species not recorded herein were introduced but did not become established. The total of native species is 195.

Of the 205 species, 62 may be ranked as game and/or food fishes. Included in this category are larger true minnows - nestbuilding chubs and the fallfish, and larger suckers. Although often spurned by gamefishermen, some chubs and the fallfish are wary and often can be enticed to take artificial flies only after a careful stalk and presentation. Many suckers are avidly sought by the cane pole anglers. At least many of the other 143 species provide forage for gamefishes and other important links in aquatic food webs.

Why are there so many freshwater fishes in Virginia? One reply involves the great diversity of habitats available - tumbling rocky, cold to warm streams in mountains, moderate gradients with sandy bottoms on the Piedmont, gently flowing, acidic, darkly stained waters on the Coastal Plain, and estuarine conditions. Many of these factors occur in combinations additional to those listed, and all have been populated by fishes. Of the Virginia species, 101 basically are montane and upper Piedmont forms, 45 are more or less lowland (outer Piedmont, Coastal Plain, and estuarine) fishes,

and some 59 frequently occupy both major subdivisions. The most diverse assemblages inhabit moderate gradients in uplands, where riffles frequently alternate with pools, the water is usually clear, and the bottom stones in swift currents are not covered by sand or silt. Moderate-size rivers, offering sufficient cover for large fishes, and special habitats for other species, generally have more species than small streams.

In some areas the Fall Line, a narrow zone separating the Piedmont and Coastal Plain, supports a highly varied fauna that often includes populations of montane species disjunct from their usual range. A good example is lower Stony Creek, Sussex County where slightly stained waters course through conditions reminiscent of upland and lowland streams. The vast majority of Virginia freshwater fishes is adapted to running water. Only two natural lakes exist in the state - Mountain Lake at about elevation 4000 feet and Lake Drummond near sea level in Dismal Swamp. Large and small impoundments recently have provided suitable habitats for several introduced species, particularly certain game fishes such as muskellunge, northern pike, and striped bass, and a panfish, the redear sunfish.

The geological history and ecology of drainage systems have been dominant factors in the evolution and spread of fish species. Many impediments to movements of fishes are ecological, and often are subtle. Physical barriers to dispersal, such as interdrainage divides, are obvious. Closely related species with very similar requirements may exist in separate drainages, but if afforded opportunity to coexist some may become extinct through competition for the same resources such as food and spawning habitat. Some divides have been recognized as forming major faunal boundaries or zoogeographic breaks.

The major prehistorical manner by which species have "crossed" divides is stream capture or piracy. One stream may erode through a divide and intercept a tributary of an opposing drainage. The flow of the latter tributary may then be permanently diverted, along with its aquatic biota, into the captor. Thus the captured biota becomes shared by the two drainages, and may disperse throughout much of the priating drainage. Exchange of species may also occur in both directions, whereby both drainages become enriched.

Some of the most interesting aspects of the ichthyofauna are speciation - evolution of races, subspecies, and species - and endemism - confinement to a single drainage. Many populations have differentiated from ancestral ones when isolated, often after stream capture, from latter by barriers such as divides. Newly evolved forms may later spread to other drainages, or remain as endemic in the one drainage of their origin. Some 24 endemic species occur in Virginia, largely in either the Roanoke, New, or Tennessee drainages.

Let's Talk Turkey



By WILLIAM D. WEEKES
Spartanburg, South Carolina

The wild turkey, the only true native game bird of the American continent stands as a symbol to our first truly American holiday--Thanksgiving.

On December 13, 1621, a three-day festival began: a first Thanksgiving, as proclaimed by the Plymouth colony's governor, William Bradford. The purpose of the festival was to give thanks. Those who gave thanks had good reason for doing so; they were still alive while half their original number had been wiped out by the previous winter's severity. Moreover, the late summer's crop of maize had been plentiful.

Indians, who would be victimized by European settlers in centuries to follow, were then friendly. Reportedly more than 80 of them came to help the Pilgrims celebrate Thanksgiving. They brought wild turkeys and venison for their share of the festive repast. John W. Aldrich, in the book *The Wild Turkey and Its Management*, (The Wildlife Society, 1967) gives a short account:

"Early eastern colonists were surprised at the great number of wild turkeys which they encountered, as well as at their relatively greater size and browner coloration than the domestic variety which they brought with them from Europe to the New World."

Apparently this big American bird was comparatively tame during the days before the influx of the white man's "firestick." They were in an abundance sources say was "almost unbelievable." These birds were reported seen in numbers approaching 200 per troop in Illinois in 1723. Gobblers were said to average 40 pounds. In southern Maine (reported for the winter of 1638-39) one naturalist reported three score broods sunning one morning. Another source, in 1612, reported turkeys, 40 to a flock, in Virginia. Early eastern wild turkeys, numbering into the hundreds per flock, were common in early reports documented in A. W. Schorger's book, *The Wild Turkey: Its History and Domestication* (University of Oklahoma Press, 1966). Schorger tells of one source's information on wild turkey abundance in eastern Massachusetts in 1632.

"I have asked (the Indians) what number they found in the woods," stated Schorger's source. "(They) have answered a thousand a day; the plenty of them is such in those parts."

"Early travelers in Virginia," reported an Aldrich source, "boiled turkeys and venison together, making what they considered an excellent soup. This was deemed an affront to the spirits by the Indians, who feared that it would cause all game to be driven from the forest."

The turkeys the Pilgrims brought with them were kissin' cousins of those turkeys the Indians presented to the Thanksgiving celebration of 1621.

During the early 16th century, Spanish explorers encountered the wild turkey for the first time in Mexico and brought the birds back home. Until recent records revealed otherwise, it was first thought the turkey was introduced to the Old World (Spain) in 1521. Old Spanish records now reveal the bird may have been first taken to Spain in 1498. Although some scholars state the possibility of the turkey's introduction in England in 1524, the earliest concrete date is set at 1541. And it is generally accepted that the wild turkey first arrived in England from Spain.

By late 16th century England (the time of the Pilgrims, known then as Separatists) turkeys were being raised and sold for food. Their colors were usually white, black, or mixed white and black, with the males weighing about 15 pounds (those as heavy as 25 pounds were a rarity).

"The comments of early settlers varied on the relative merits of the flesh of wild and domesticated turkeys as items of food," Aldrich wrote. "Most, however, seemed to consider the wild bird the greater delicacy."

Europeans labeled the bird "turkey" because of its similar appearance and feather-fanning habits to the Asian peacock. Its "exotic" demeanor led them (obviously most of them) to believe the creature originated in Turkey.

ment. Perhaps the term "emotion" is a poor choice. What we sometimes call the emotional approach is more a matter of oversimplification of complex problems. In some cases the problem stems from attempting to attach an alien set of values to wildlife. As the rancher blames the eagles for his sheep losses, the rabbit hunter damns the fox for a shortage of rabbits.

Some deer hunters refuse to take antlerless deer or others call for restocking as a panacea to solve all wildlife shortages. On the surface all appear to be logical means of preserving stock or wildlife, but are they?

Viewed from a distance with a vision uncluttered by biological facts, the solutions to problems concerning the coexistence of mankind and wildlife seem simple. Most of these "simple" solutions have been tried and found wanting. In order to gain just a glimpse of the complexity of the problem we must look backwards into the first two hundred years of our experience.

We find records of game laws far back into colonial times but modern wildlife management had its true beginnings late in the last century, about the time we started our second hundred years.

It was late in the Nineteenth Century when conservationists and sportsmen became aware that market hunting was threatening the very existence of many species of wildlife. Both game and non-game species were being exploited for their flesh, fur and plumage.

Public pressure, spearheaded by hunters, fishermen and conservationists resulted in the formation of wildlife management agencies in the various states. The concept of funding fish and wildlife management through fees charged for hunting and fishing licenses came into being. This concept, incidentally, is about the only one that has not been challenged in later years.

Armed with the authority to establish and enforce hunting and fishing regulations, a little money, but with a paucity of experience or biological knowledge the early wildlife agencies took on what they were soon to learn was a difficult task.

The problems of wildlife shortages were approached in much the same manner as critics of hunting and fishing would have us approach them today. In fact, when you hear today's critics espousing their ideas on late evening TV talk shows you can't help but get the feeling that you have been there before.

One of the early tools tested, for example, was the total protection concept. It took decades and a staggering amount of losses of valuable animals to disease and starvation before we discovered that total protection is often an excellent expedient to be used on a temporary basis, but worse than no protection at all if prolonged beyond its usefulness.

At present brant, redhead ducks and canvasback ducks are enjoying a measure of protection. The aim is to return more and more adult birds to the breeding grounds each year. Nesting failures have resulted in sub-

stantially decreased populations of these species and a larger nesting population is required to bring their numbers up to an acceptable level. It might be interesting to note that the research and observations that disclosed the plight of these species was financed by sportsmen's funds alone!

It would seem that restocking of animals in short supply would be a quick and easy way of bringing up the inventory. Wildlife agencies thought so years ago. So did sportsmen. Many still do. Restocking was very popular because it was a highly visible technique. People could see game being restocked. The newspapers could photograph it. In all it was a great public relations program - but that's all it was. As a management tool, it was often worse than not stocking at all. It is very possible that rabbit restocking has had a great deal to do with public antipathy against foxes as enemies of rabbits.

Restocking, properly applied, remains a valuable management tool. While seldom effective in restoring a population in short supply where some factor is responsible for the shortage, stocking is useful in restoring wildlife to a former range where none presently exist. The stocking of wild turkeys is a prime example. Further, stocking is also valuable when biologists determine that an unused "niche" exists that can be used by exotic species with little competition from or with natives. Many of our exotics, including pheasants, Hungarian partridges and chukars exist in the United States because of such intelligent use of the principle of restocking.

As wildlife management techniques advanced through the second hundred years, we discovered that manipulation and protection of the habitat was perhaps our most valuable management tool. No creatures, wild or domestic, could survive without the essentials required to support life. Advanced methods of controlling wildlife inventories and the intelligent application of open seasons and bag limits have enabled us to bring wildlife populations up to the present high abundance. Today no population of game birds or animals is endangered by sport hunting. In fact, nearly every species of game is in greater abundance than it was fifty years ago! Now, as we celebrate our two hundredth year, we must stop and contemplate our future. Were the first two hundred years the hardest? I think not. The worst is yet to come.

The problems that face wildlife today are manifold. For the most part they stem from the basic truth that man and wildlife are in competition for the resources this planet has to offer. The human population today is greater than the sum total of all men who have ever lived on Earth - and this population is still growing at an alarming rate. There is no other large mammal of similar size on Earth in such numbers and no mammal makes more demands upon his environment than man.

(continued on page 30)

The James River

"The James River . . . from its source which is a thousand freshwater springs and seepage areas in the mountains to its mouth in Hampton Roads, is a truly magnificent river system--one of the finest, totally state-confined great water courses of America."

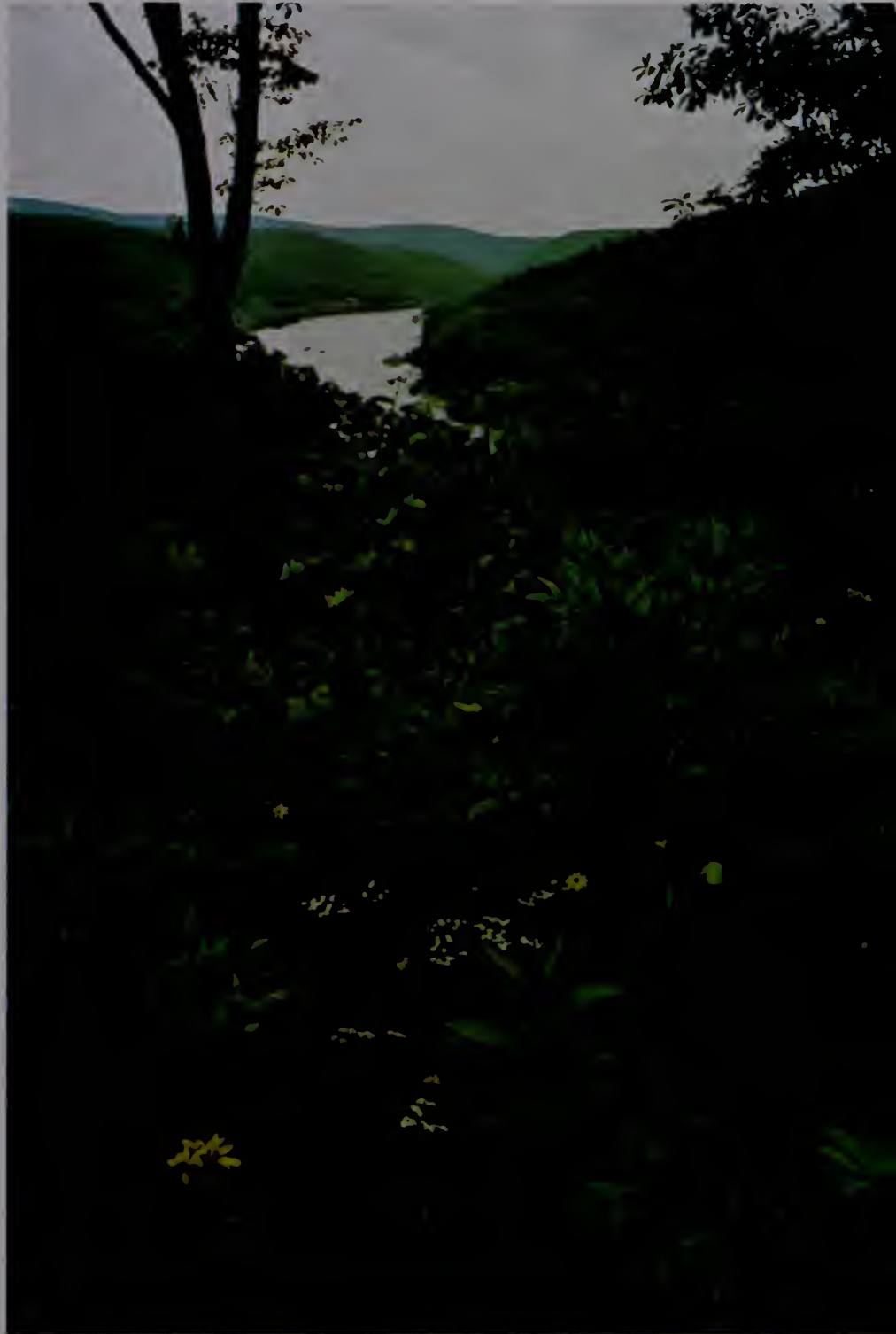
--James J. Shomon, National Audubon Society

From the book, "Falls of the James" photographed and written by David D. Ryan, Staff Writer, *Richmond Times Dispatch*. The book is available at book stores in most of Virginia's major cities.

The James slips out of a pool created by the confluence of the Jackson and Cowpasture rivers at the tip of a small island. The river cuts through the Blue Ridge Mountains and falls over rocky ledges and boulders of folded and faulted limestone, shale and sandstone toward Lynchburg. Below Lynchburg, the James flows through wide, quiet lowlands and is swollen by the Buffalo, Tye, Rockfish, Hardware, Slate, Rivanna and Willis rivers. Green, smooth and wide, the river usually glides sleepily; but, as if given a sudden push, it breaks into a run toward Boshers Dam and the Falls. "The Falls" form a seven-mile staircase that has blocked natural river traffic ever since man found his way to the river. Once the river passes the center of Richmond, it becomes placid and subject to tidal changes as it crosses into the Coastal Plain and takes on the muddy color of the land.

The River

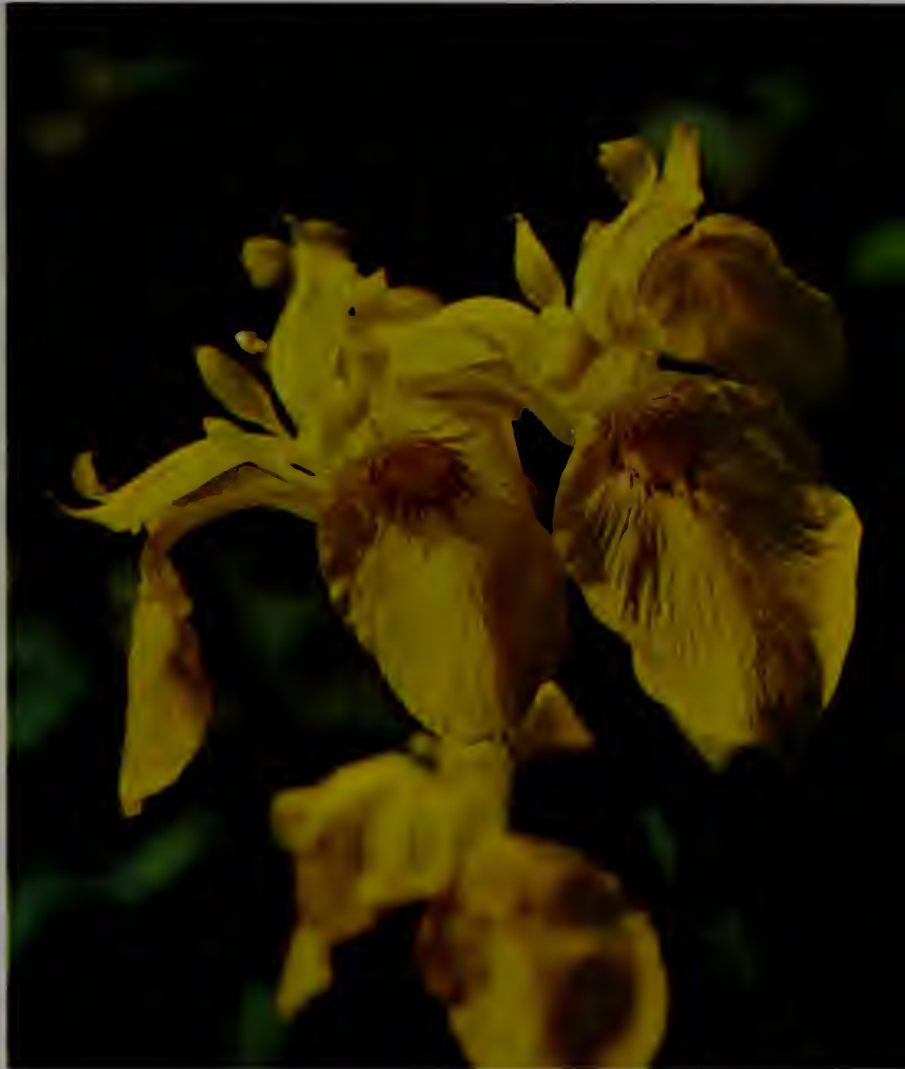
Peaks of the Blue Ridge Mountain form a backdrop for the James River's course through a gorge below Glasgow.



A dramatic, low-key photograph of a smallmouth bass in mid-leap. The fish is silhouetted against a dark, rippling background of water. It is angled upwards and to the left, with its mouth open and a small, light-colored insect (a stonefly nymph) visible inside. A large splash of white water is visible on the right side of the frame, indicating the point of exit from the water. The overall mood is one of intense action and natural beauty.

The River Life

Near the south shore of Williams Island, a smallmouth bass lies in wait under one of the boulders as a metamorphosing stonefly nymph rises to the surface . . . but with a sudden burst, the bass breaks the water surface, gulps the nymph and dives back through the spray.



Above: A fisherman uses his net to scoop up herring from the Richmond rapids. Top Right: Yellow Flag is also known as Water Flag, since it grows in swamps and shallow water. The root produces a black ink-like substance used by the Indians to make dye. Below Right: Bloodroot gets its name from the color of the juice of its root, which was used by the Indians as war paint.



The Falls

The thunder of the James River as it battles Bosher's Dam reverberates across the fields and woods in western Henrico County, as if to signal the beginning of the Falls. The dam of granite blocks marks the start of the river's one hundred and five foot drop over seven miles through the Richmond metropolitan area. Except for some mountain sections, the river falls no more steeply anywhere else in its route to the Chesapeake Bay.

"There is a very wild prospect both upward and downward, the river being full of rocks over which the stream tumbled with a murmur loud enough to drown the notes of a scolding wife."

--William Byrd of Westover.

Blue-eyed grass is very plentiful, but very fleeting. Generally the bloom will close up by midday.





The Canal

"Better even than a crack four-bell stage, tar bucket and bridle dog included, was travel on packet boat on the James River and Kanawha Canal. Why, it beat the journey by coach by so many ways from Sunday, that just sitting on the deck and spitting plump into the water without troubling to cast about for a spittoon was a joy into itself" —Richmond Times-Dispatch Magazine.

Above: Passengers boarded canal boats at Eighth Street for the \$7.50 trip to Lynchburg. Below: This view of Mayo's Bridge and the Richmond skyline was drawn in 1817 by Peter Maverick.



To feed this staggering population, better farming methods and more land producing more crops are required. Already wildlife-rich hedgerows are disappearing. Chemical weed killers have removed much of the cover from fields and more efficient harvesting methods leaves little in the fields for wildlife.

To provide power for growing industries many new plants are required. Unless there is a breakthrough in the technology for generating power, we will see more and more plants springing up along our waterways. Thermal pollution will become a major problem and a free flowing stream innocent of dams will become a memory.

Nearly every event we call progress has some effect upon wildlife. In some cases these effects are apparent, in others they are more subtle. Take the new super tankers, for example.

The use of very large tankers to transport oil from overseas sources makes a lot of sense. Considering the cost of oil these days, we should make use of all of our resources in an attempt to reduce prices. However, the super tankers draw more water than ordinary vessels and most of our ports cannot accommodate them. The alternatives, of course, are to deepen our ports or to provide offshore pipeheads where the oil can be unloaded.

Deepening a port has some severe environmental considerations. The first problem is the disposal of the soil. In less enlightened days it would be used to fill in wetlands, but we now recognize the importance of our wetlands to fish and wildlife and we cannot afford to lose another acre.

In many cases, ports have been deepened to bedrock. Further deepening may break into artesian rivers, allowing salt water to ruin them. Or, the deeper ports will permit tidal action to penetrate further inland, creating more brackish areas, drastically changing the wildlife habitat and perhaps ruining some freshwater supplies used by metropolitan areas.

Potential sources of danger to fish and wildlife are too numerous to catalog. For that matter it's doubtful if any one person or one agency has the total problem in perspective. Danger can come from any of thousands of sources. For example, we are learning that something as apparently harmless as an aerosol can may have the potential of destroying the protective layer of ozone that surrounds this planet. We are also learning that high flying supersonic aircraft may also damage the ozone layer. We see forests of mixed hardwoods and pine being replaced by only pine which means that wildlife can no longer find vital acorns, nuts and other mast in them. We are seeing river after river being dammed, diverted or superheated for power or water. Our meandering meadow streams are being straightened and rendered sterile in the name of soil conservation. Despite much lip service, the pollution of

our air and waters continue, in many cases at a level higher than before. We see conservation considerations set aside for the sake of energy - and the beat, perhaps the deathbeat for wildlife - goes on.

Progress, however, is not a dirty word. But progress must have a conscience. There is no more room in the future of our nation for progress without consideration for the environment than there is for environmental considerations without progress. In this vein, a great deal of damage has been done by extremists on either side. Credibility suffers when virtually every step forward is paralyzed by a law suit. Yet, on the flip side, irresponsible actions such as Virginia's Kepone incident erodes public trust.

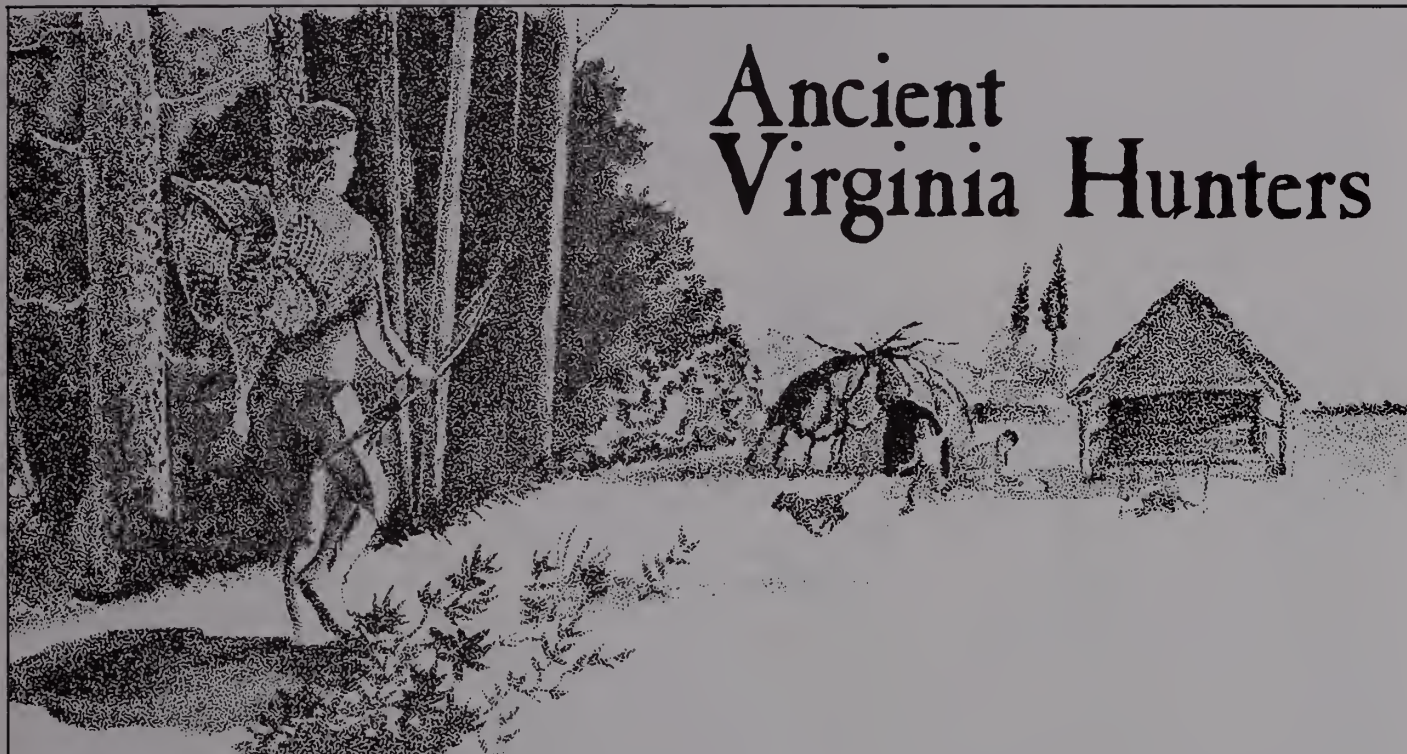
If technology poses most of the threats to the future of fish and wildlife, then the knowledge and application of technology by agencies and individuals will also ensure the future of wildlife. More than ever before, wildlife protection agencies must work in close coordination with other agencies charged with other areas of environmental protection. Organization and staff work are demanded as never before. Methods must be perfected to detect and cope with threats as they occur. At the same time, wildlife agencies must develop more effective methods of inventorying both game and non-game species of fish and wildlife.

Unfortunately, at a time when unity is required, there exists broad gaps of misunderstanding between various factions working towards a common goal - the defense of the future of fish and wildlife.

The crux of the problem is an antipathy by some groups towards the taking of wildlife for fur or sport. In some cases, the method of taking is more objectionable than the harvest itself. Quite naturally, sportsmen who have footed the wildlife conservation bill for a century, find themselves on the defensive. The result is the spawning of acrimony and a needless waste of funds that could be better spent in direct support of fish and wildlife problems. It appears that many supporters of wildlife are more concerned with the quality of death, rather than the quality of life.

There is a need for compromise in the face of the greater threat. Perhaps sportsmen could take steps to become better qualified at their sport, to police their ranks, and eliminate many of those that bring discredit to hunting, trapping and fishing. The critics of the blood sports, on the other hand, may find it in their hearts to attempt to see the other side of the problem. If the two factions could get together, a dire future could be a little brighter.

Both sportsmen and protectionists share the same goals . . . the existence of as many wild animals as natural laws allow. The need for cooperation is immediate, or the next two hundred years will make our first two hundred seem as years of milk and honey for those wild creatures we hope to have to enrich the lives of generations yet unborn.



Ancient Virginia Hunters

By LUDWELL LAKE
Culpeper

Everyone knows that our Indians of Virginia used deer for meat and clothing, but that wasn't all. Excavations of Indian sites all over the state are producing proof of the Indian's ability to use what wildlife he had to the best of his ability.

A site excavated several years ago in Mecklenburg County brought forth this information:

An island along the Roanoke River was the home for a while of some of our past citizens. The animals they killed were many and of varied kinds. The digging of the site yielded 218 bones of large animals, primarily deer, 97 medium-sized animals such as foxes and raccoons, 241 small animal bones of rabbits and squirrels, and 106 bones from fowl such as turkeys, ducks, and small birds. Many of these bones had been broken to obtain the marrow. Fish bones, catfish, gar, etc, accounted for 87, scales from the gar fish were 118, and bones and shell fragments of turtles and terrapins amounted to 211.

Some 94 bone specimens were altered to form bone tools such as awls that were fashioned from splinters of deer bone and bird bones.

Bone fish hooks were usually made from the sections of deer and bird bone.

An unusual practice at the site appears to have been the trimming of deer antler tines. The antler tines were drilled or hollowed out in their base ends, probably to create projectile points. Considering the hardness of the antler and lack of metal tools, the question of how

these antlers were trimmed remains a puzzle. One antler uncovered may have served as a handle for a tool while another appears to have been a smoking pipe.

A projectile point found was fashioned from the hoof or toe bone of a deer, and a small canine tooth found had a perforation in its base end for stringing. Also, a perforated needle of bird bone was found.

Fragment portions of bowls or ladles made from the carapaces of small water turtles and the common land terrapin were rather plentiful. While no complete specimens were recovered, 14 fairly large sections of worked carapaces were taken. This count was obtained by counting the frontal sections of those shells showing signs of interior smoothing and scraping.

Freshwater mussel shells were abundant at the site, and the shells of freshwater snails of several varieties were also common. No shell artifacts were recovered, and only a single portion of sea shell was found — a piece of unworked scallop shell.

About 400 years ago oyster shells were crushed and mixed with the clay out of which they made their pots. This shell acted as a temper to strengthen the vessel. At many sites complete oyster and clam shells are found in pits, which indicates the consumption of this fresh water and sea food.

The Virginia hunter of 1000 years ago was a good one. He used the animals he killed for food, dress, tools, and shelter. He was not a wasteful man but one who took advantage of what he had killed to the best of his ability.

We should all stop and think — how many of us today use the animal we kill even for food?

ON THE WATERFRONT



Edited by JIM KERRICK



PLEASURE BOATING OLDER THAN THE NATION

For the nation, 1976 marks the bicentennial. For the sport of pleasure boating, it's a tricentennial - and then some.

Pleasure boating was apparently well established by 1656, when the burgomasters of New Netherlands passed a law forbidding "jaunting in a boat" on the Sabbath. Coincidentally, this is also the first recorded governmental attempt to regulate pleasure boating, though today's measures aren't done in the name of religion.

By 1730, Newport, Rhode Island was already a Mecca for the rich, and boating on the bay and dancing parties topped the list of favorite pastimes.

By and large, the boats used by these early New Yorkers and Newporters were rowboats and small sailing craft, designed for commercial fishing or as auxiliaries on commercial sailing ships.

The "Fancy," owned by Col. Lewis Morris of New York, appears to be the first American sailboat designed exclusively for pleasure. History records that another, the 22-ton sloop "Jefferson" was built in 1801 for Capt. George Crowninshield, a well-heeled Massachusetts shipowner. In 1815, Crowninshield did himself one better and launched the 83-footer that he appropriately dubbed "Cleopatra's Barge," (she was 23 ft. abeam).

By 1824, interest in boat racing was sufficient to produce a crowd of 50,000 on the New York waterfront to see the yacht "Whitehall" cop a

\$1,000 purse. Ticker tape hadn't been invented yet, but the crew did get a tumultuous civic ovation.

Boating remained a sport of the very rich throughout the 19th Century. J.P. "If-You-Have-to-Ask-the-Price" Morgan's fabulous "Corsairs" and Jay Gould's aptly-named "Buccaneer" were but a few of many floating palaces plying American waters.

Not until the advent of the outboard motor did boating come within reach of the average man. In 1893, German gasoline engine pioneer Gottfried Daimler teamed up with American piano mogul William Steinway to introduce an outboard-powered boat at the 1893 Columbian Exposition in Chicago. The boat became a sensation to rival Little Egypt when it was used to rescue six men from storm-tossed Lake Michigan. Skeptics denounced the "rescue" as a publicity stunt, which would make it yet another industry first.

Cameron B. Waterman's "Waterman Porto" outboard was in mass production by 1906. About the same time, Ole Evinrude was building his 1.5 h.p., 65 pound motors and selling them for \$62.15 each. Evinrude and Waterman didn't have the market to themselves for long. The competition grew fierce throughout the 'teens and 'twenties. Then came the great depression, and the suspension of civilian manufacturing during World War II.

The new technologies and production techniques spawned by the war, however, soon brought power and sail boating within reach of even more Americans. By the mid-fifties, the industry was turning out half a million outboard motors and as many boats each year.

In 1976, close to 50 million Americans, about one in four, will go boating more than once or twice. And no burgomaster is about to stop them from doing their jaunting on the Sabbath.

Shown at Safe Boating Week Proclamation Signing Ceremony. Left to right, Chester F. Phelps, Executive Director, Virginia Game Commission; Charles Bernhardt, Rear Commodore, 5th District Coast Guard Auxiliary; Governor Mills E. Godwin, Jr.; Commander Robert F. Stoeltje, Director Coast Guard Auxiliary, 5th District; Gerald Simmons, Assistant Chief, Law Enforcement, Virginia Game Commission.



Satterlee

Arvid Benson

20th Century Sportsman

By F. N. SATTERLEE
Information Officer



Born of Swedish immigrant parents in the farming community of Dennison near Northfield, Minnesota, his name was pronounced *AIR VID* with the typical lyrical loveliness of the Scandinavian language. Away from the Nordic community in later life it was easier to answer to Arvid, but in any case his first name could just as well have been ADVENTURE.

He was one of 13 children growing up on the farm, and while still a young lad, was introduced to hunting and fishing by a neighbor. Davenport by name, this individual was to play an influential part in Arvid's life and in his continuing love affair with wildlife and nature.

His father's illness forced the family to leave the severe climate of the mid-west, and when Arvid was not yet a teenager, they settled on a farm near Princess Anne, Maryland. Times were very bad. It was at the height of the depression and, to make matters worse, the senior Benson passed away. This made it necessary for Arvid and some of the older children to leave school to provide for the family.

Some time later he returned to Minnesota to work on a farm near where he grew up. Renewing his acquaintance with Mr. Davenport, he became interested in big game hunting and the two hunted in northern Minnesota.

Returning to Princess Anne, on Maryland's Eastern Shore, he took what work he could find. At one point he was paid the grand sum of \$.50 per day while working on a road crew.

However things weren't all bleak. Arvid was member of the Princess Anne Antioch M.E. Church where he sang tenor in the choir. Each week the group practiced at the Director's house and this included the added benefit of taffy pulling and pleasure of eating homemade ice cream.

In that same choir was a girl from Princess Anne. Her name was Dorothy Gibbons. Dorothy, or Deenie as she is more

frequently known, remembers that Arvid's contribution to the choir and, for that matter, hers, was not so much to the musical excellence of the group as it was to the volume. She remembers also that it was June and the year was 1935 when in the parsonage of that lovely church she married Arvid.

By this time, Benson's natural ability at construction work enabled him to find that type of work in Northern Virginia and he and Deenie moved to Arlington. There they met Ted Vest, who was also in construction work and an avid hunter. The two formed a highly successful business of their own and built houses, shopping centers and a variety of structures throughout the area.

Benson also began ranging farther afield to hunt. First to S.W. Virginia then on to West Va., Md., Colo., British Columbia and beyond. Deenie recalls the welcome supply of wild game that graced their table as a result of the trophy animals that Arvid bagged. This was before home freezers were common and she spent long hours canning the meat for further use. It was gratifying to be able to practice this type of frugality and they purchased little if any meat and instead ate venison all winter long.

After the Bensons became members of the Arlington Rifle Club, Deenie joined Arvid in competitive shooting and soon became competent with a large caliber rifle. Arvid was satisfied that he had taught Deenie to shoot well enough and in 1946 took her on a month-long-hunt in Wyoming. It was during this trip that she killed her first antelope and black bear, and it was also the first time she outdid Arvid. She took an elk which is the largest elk head in the collection. While hunting in the Jackson Hole area, firing off-hand with open sights, she killed the 800-pound animal with one shot at a range of 150 yards.

Hunting in British Columbia and Alaska, Benson took stone



A small corner of the room which housed the Benson Collection in their home in Arlington, Va. Containing more than 50 heads, many of which were or are Boone and Crockett Trophy winners, the collection is now located at VPI & SU in Blacksburg, VA. RIGHT: Arvid Benson

sheep, goats, black and grizzly bear, caribou and elk to name a few. In Arizona he bagged a Desert Sheep to complete a Grand Slam. A "Grand Slam" consists of one head each of Desert, Dall, Bighorn and Stone sheep.

The adventure of these hunts enticed Arvid to roam farther and he bagged a Kodiak bear, walrus and polar bear. He continued to shoot in competition as a member of the Virginia State Rifle Team.

Remarkably it was between the ages of 60 and 64, long after most persons cease to shoot in competition, that he earned all the 'legs' to the Distinguished Rifleman Badge, the much coveted award presented by the National Board For The Promotion of Rifle Practice. Benson also earned the National Rifle Association's Lifetime Master Rating in outdoor position and indoor small bore rifle, and lifetime Master with High Power Rifle.

Arvid Benson was not only a master hunter, but was also a sensitive artist with both still and motion picture cameras. He recorded on film nearly all of his hunts including the animals bagged, but possibly more importantly, the habitat in which each frequented. This photographic record is certainly unique. Unique also is Arvid's meticulous record of each trip. For example his records indicate that from 1930 through 1967 he travelled a total of 126,000 miles to and from Virginia on hunting trips. While on these hunts, and after arrival in camp, he trekked an additional 6,200 miles on horseback or on foot. The record also includes the number of days hunted, animals hunted, game taken and numerous other details.

For over 40 years Arvid Benson roamed the North American Continent amassing what is possibly the most complete collection of trophy heads in existence. Consisting of more than 50 heads, many of which are now or were Boone and Crockett trophy winners, the collection also includes two "Grand Slams" and one each of 26 different available North American game animals. Additionally there are over 60 other trophies which could be mounted at a future date.

In early 1974, Arvid, suspecting that something was wrong with his health, underwent examinations and was informed that he had a terminal illness. Typical of this quiet, methodical and unassuming man, he meticulously began planning for the inevitable. Included in these plans was the disposition of his cherished collection. Not wanting to fragment it in any manner, he contacted the Virginia Game Commission, offering that organization the collection in its entirety. The Commission gratefully accepted the Benson's offer and final negotiations were completed shortly before Arvid Benson's death.

During September of 1974, the Benson Collection was moved from their home in Arlington, Virginia, to Virginia Polytechnic Institute and State University at Blacksburg, Virginia where it is on long-term loan to that institution by the Game Commission.

Soon copies of Arvid's splendid records and magnificent photography will be added to the collection. Making it one of the most carefully documented, by word photo and artifact, in the world and certainly a fitting tribute to *AIR VID*.

On October 24, 1975, Mrs. Arvid Benson, "Deenie", was honored at a meeting of the ten-member Commission of Game and Inland Fisheries held at VPI & SU. During the ceremonies, Deenie received a limited edition wildlife print of a Cougar, which was presented to her on behalf of the Commission by the Chairman, Dolph Hays, and the Executive Director, Chester F. Phelps, and the sincere expressions of gratitude from the entire body. Additionally Deenie received a letter of appreciation from William E. Lavery, President of VPI & SU, which was presented by Dr. Henry S. Mosby, head of the Department of Fisheries and Wildlife. As a fitting climax, Governor Mills E. Godwin, Jr., wrote a personal letter of thanks to Mrs. Benson. This letter concluded with the following, "... I think that a collection so large and so unique is certainly worth a fortune and to know that you wanted the Commonwealth of Virginia to have it makes your gift very meaningful to all of us and Virginians for many generations to come, and we applaud your action in this regard."

Bird of the Month:

The Carolina Parakeet

by JOHN W. TAYLOR
Edgewater, Maryland

The Carolina parakeet is an especially appropriate choice as the featured bird in this bicentennial issue. It ideally symbolizes the pristine American wilderness, the endless forests and the vast marshes that graced this country when it was first founded. It symbolizes as well what has since happened to these natural wonders. Today, like the parakeet, most of wild America is gone, lost forever to succeeding generations.

The last Carolina parakeet was collected from the wild in 1901 in Florida. There were numerous sightings, many of them questionable, during the first decade of the century, and finally in 1914 the last known individual, a zoo captive, passed on. An entire species had vanished from the earth that had been its home for unknown thousands of years.

Nearly 12 inches long (the gracefully pointed tail comprised one-half of this length) and clad in soft greens accented with bright yellow and orange, the Carolina parakeet was an entrancingly lovely creature. Trusting, gentle and intelligent, it made an ideal companion, and many were kept as pets.

But man decreed that it could not coexist with the parakeet, no matter its beauty, no matter how future generations might treasure the mere glimpse of one. The bird was just too fond of the fruit and seeds of cultivated plants. A large flock could decimate an entire orchard, and in the deep south they picked off the oranges and peaches while the fruit was still green. According to Audubon they descended upon stacks of grain, "committing great waste."

When individuals of a flock were killed or wounded their companions hovered over them out of either curiosity or sympathy, thus permitting an entire flock to be wiped out in short order. Too, large numbers could readily be captured at night, when they congregated in hollow trees to roost.

Virginia was not prime parakeet territory. It is a bit north and east of its principal range, which was centered in the lower Mississippi Valley. But the bird did occur here with some regularity. Captain John Smith mentioned them in his narrative, as does Col. William Byrd (History of the Dividing Line and other Tracts, written 1728-1736). Mark Catesby (17) writes



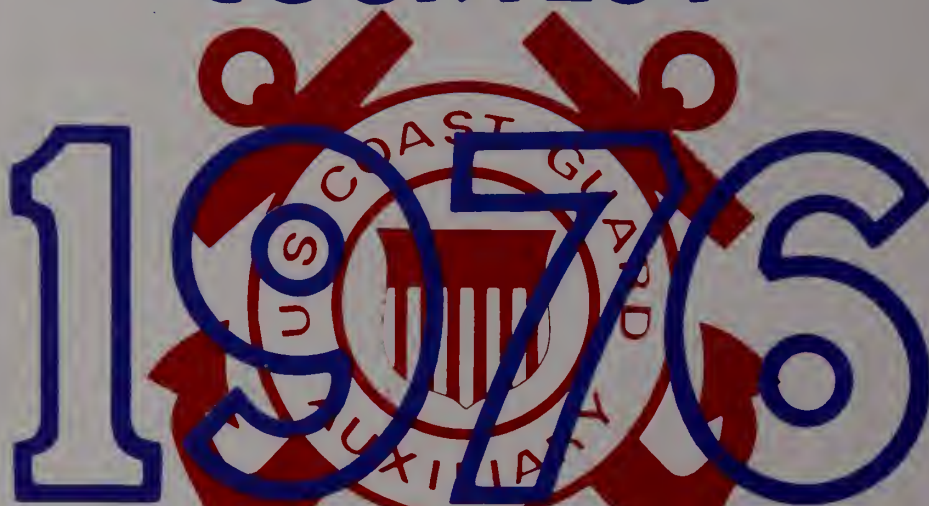
of the bird in Virginia. The last state record is of several shot from a flock near Washington in 1865.

Indeed, the Carolina parakeet is an apt symbol for this bicentennial celebration. May its loss shame us into saving what remains of our beloved American landscape; may the memory of it help salvage the last remnants of our natural heritage.

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